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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/686,773	10/11/2000	Timothy L. Racette	99556466	5174

7590 10/17/2002

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EXAMINER
WINTER, GENTLE E

ART UNIT	PAPER NUMBER
1746	7

DATE MAILED: 10/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

mk-7

Office Action Summary	Application N .	Applicant(s)	
	09/686,773	RACETTE ET AL.	
	Examiner	Art Unit	
	Gentle E. Winter	1746	

-- The MAILING DATE of this communication appears on the cover sheet with the c rrespondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *August 30, 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-58* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-58* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Double Patenting--Withdrawn

1. Claims 1-5, 7, 9, 11, 13-15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 34, 36, 38, 40, 42, 44, 46, 48 50, 51-56, and 58 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over the claims 11 and 13 of U.S. Patent No. 6,355,072 ('072). The terminal disclaimer of paper 6 has apparently obviated this rejection. The rejection is withdrawn.

Claim Rejections - 35 USC § 102-Withdrawn

2. Applicant has persuasively argued that the amended claims are no longer anticipated by the '481 patent.

3. Claims 1-58 were rejected under 35 U.S.C. 102(e) as being anticipated by United States Patent 6,280,481 to Storey-Laubach et al. ('481). In light of Applicant's amendments to independent claims 1, 2, 33, 50, 57, and 58 it is not clear that '481 identically discloses the step of cleaning the substrate *in the absence of liquid carbon dioxide*. However, it appears that the instant invention may still read on a substrate cleaning process including a composition with carbon dioxide *dissolved* in one or more organic solvents. As used in the claim "liquid carbon dioxide" is construed to mean that the carbon dioxide itself is a liquid, not that it is dissolved in a liquid. Absent such an understanding, the rejection would have been maintained. The Examiner did not see the limitation "extraction" in the claims (as argued at page 14) however extraction is seemingly comparable to removing and venting or draining are seemingly both means of removing.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2-32, 34-49, and 51-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent 6,280,481 to Storey-Laubach et al. ('481) in view of *SPIE Micromachining and Microfabrication, Oct. 1996* to Dyck et al. (hereinafter Article).

5. The '481 patent discloses a process for cleaning substrates comprising: cleaning the substrate with an organic solvent; and removing the organic solvent from the substrates using a pressurized fluid solvent. The organic solvents are listed column 3, line 29 through column 6, line 9. What Applicant asserts is not present, is an explicit teaching of cleaning the substrate in the absence of liquid carbon dioxide. Article discloses cleaning with an organic solvent and then removing any solvent residue with carbon dioxide fluid. See e.g. the last paragraph of page 2.

6. Article discloses a process for cleaning substrates comprising: cleaning the substrate with an organic solvent; and removing the organic solvent from the substrates using a pressurized fluid solvent. Article discloses generally an organic solvent, to include ethers, see page 5 "Experimental" section. The artisan would have been motivated to make the instant combination for the reason set forth explicitly in Article. Specifically, an attempt to remove any residual solvent that may still be contaminating the substrate.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 2, 3, 11-18, 33, 42-49, 57, and 58 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 3,966,981 to Schultz. Schultz teaches the use of liquid carbon dioxide for the removal of organic solvents including *inter alia* diethyl ether; ether alcohols such as ethylene glycol monomethyl and monoethyl ether; halogenated hydrocarbons such as chloroform, ethylene dichloride, perchloroethylene and the like.

8. It is noted that Schultz (3,966,981) is drawn to a process for removing residual solvents. The argument that "cleaning" would not read on "defatting" is duly noted. However, a broad definition of cleaning seemingly does read on "selective removal of material", in Schultz, an organic solvent is employed to remove fat, and then a liquid carbon dioxide solution is used to remove the residual solvent. Thus, the process is seemingly the same to the instant invention: Where the current claims are drawn to cleaning a substrate with a solvent and then removing the solvent with liquid carbon dioxide, and Schultz is drawn to removing an component from a substrate with a solvent and then removing the solvent with liquid carbon dioxide. Thus seemingly the point of contention appears to be how "cleaning" is defined.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over *SPIE Micromachining and Microfabrication, Oct. 1996* to Dyck et al. (hereinafter Article), in view of United States Patent No. 6,090,771 to Burt et al. Article discloses a process for cleaning substrates comprising: cleaning the substrate with an organic solvent; and removing the organic solvent from the substrates using a pressurized fluid solvent. Article discloses generally an organic solvent, to include methanol and acetone, see page 5 "Experimental" section. While methanol is disclosed as a solvent used in Article, Article apparently fails to explicitly disclose the organic solvents contemplated by claims 2-58. Burt et al. at (column 5, line, line 23 *et seq.*) discloses the claimed general structure and its various variants. The artisan would have been motivated to select the instantly claimed organic solvents for at least the reasons explicitly disclosed in Burt et al., namely because of their solvency characteristics (see for e.g. column 4, line, line 40) and reduced residue and desirable drying characteristics (see for e.g. column 5, line 55 *et seq.*).

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Prior Art Of Record

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant's IDS is considered to be an excellent source of relevant data for the instantly claimed invention. Applicant is thanked for a thorough search of the art. The disclosures of the IDS, in the aggregate, teach most if not all the instant claim limitations.

2. United States Patent No. 6,258,766 to Romack is considered to be substantially cumulative to the teaching of United States Patent No. 6,280,481 to Storey-Laubach

3. The article: *A Citizen's Guide to Solvent Extraction* provides a useful listing of solvents used in the solvent extraction process. See table 1 page 3.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gentle E. Winter whose telephone number is (703) 305-3403. The examiner can normally be reached on Monday-Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (703) 308-4333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Gentle E. Winter
Examiner
Art Unit 1746

October 11, 2002

RANDY GULAKOWSKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700